IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
                                  :   Examiner: Not Yet Assigned
HIDEO TAKIGUCHI ET AL.   )
                                  :
Application No.: Unassigned   )   Group Art Unit: N/Y/A
     (Divisional of Appln.   :
     No. 08/573,519, filed   )
     December 15, 1995)   :
)
Filed: Herewith   :
)
For: INTUITIVE HIERARCHICAL   :
     TIME-SERIES DATA DISPLAY   )
     METHOD AND SYSTEM   :   April 30, 2001

Commissioner for Patents
BOX PATENT APPLICATION
Washington, DC 20231

PRELIMINARY AMENDMENT

Sir:

        Prior to examination on the merits, please amend

the above-identified application, filed herewith, as follows:

IN THE TITLE:

        Please amend the title to read:

        --INTUITIVE HIERARCHICAL TIME-SERIES DATA DISPLAY

METHOD AND SYSTEM--.

IN THE SPECIFICATION:

Please insert the following new paragraph on page 1, after the title and before "BACKGROUND OF THE INVENTION":

--This application is a division of Application No. 08/573,519 filed December 15, 1995.--

Please substitute the paragraph starting at page 1, line 18 and ending at page 2, line 4 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--In a file management system or data base system for a computer, a technique of managing data hierarchically is often used to manage numerous data items. In a file system, especially, under almost all operating systems (hereinafter OSs), the whole of the file system is segmented and managed using a plurality of hierarchical directories. As far as recently-released OSs are concerned, it is a matter of common practice to adopt a browser system in which a graphical user interface (hereinafter a GUI) is used to display a hierarchical structure of a file system or the like

on a screen, and a pointing device such as a mouse is used to point out intended data, and thus data such as a file is accessed.--

Please substitute the paragraph starting at page 4, line 4 and ending at page 4, line 7 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--A system for displaying a hierarchical file system using metaphors of folders, such as, the one installed in the OS for the Macintosh trademark of Apple Computer or the OS/2 trademark of IBM has become popular.--

Please substitute the paragraph starting at page 8, line 10 and ending at page 8, line 16 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--Recently, what is called catalogue software has made its debut as data base software running in a personal computer. The catalogue software is a data base handling

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graphics, documents, and images mainly. Fundamentally, a reduced image (hereinafter a "thumbnail image") is created for each data, and desired data is searched by checking (browsing) the reduced images.--

Please substitute the paragraphs starting at page 9, line 7 and ending at page 10, line 22 with the following replacement paragraphs. A marked up copy of these paragraphs, showing the changes made thereto, is attached.

--In the case of an album for making a collection of photographs, a user not only inserts photographs but also writes down comments or overlays a sheet of paper shown in Fig. 62 (hereinafter, a "frame"), which reveals any specific part of a photograph and hides the other part thereof, on a photograph. This is a commonly adopted technique for attracting attention to a specific photograph or highlighting an impressive photograph.

For implementing the technique shown in Fig. 62 in album software, very complex operations are needed to cut out an image using a user-specific frame and store a resultant image. Fig. 63 is a flowchart describing the operating

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procedure. At step S201, application software for drawing

graphics (hereinafter drawing software) is activated, and a

frame is created. In Fig. 64, reference numeral 901 denotes

an example of a frame created. At step S202, an image is

read into the drawing software, and superposed on the frame

by adjusting the size of the image. In Fig. 64, 902 denotes

an example of the image superposed on the frame. At step

S203, application software for manipulating or editing an

image (hereinafter, photo retouch software) is activated.

The image superposed on the frame is fetched into the photo

retouch software via a clipboard. Within the drawing

software, a frame and image can be handled separately from

each other. Once fetched into the photo retouch software,

the frame and image are made into one image. At step S204, a

portion of the image outside the frame is erased within the

photo retouch. Reference numeral 904 in Fig. 64 denotes an

example of erasure. At this time, an area designation tool

and eraser tool of the photo retouch software are used. 904

in Fig. 64 denotes an example of a resultant corrected image.

At step S205, the corrected image is saved as a new image in

a file. At step 206, the image is fetched into the album

software.

The known procedure of cutting out an image and fetching it into the album software involves activation of several software packages. The procedure is very complex and the work is hard. For carrying out the foregoing operations, a user needs a certain amount of expertise.--

Please substitute the paragraph starting at page 24, line 24 and ending at page 25, line 6 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--For accomplishing the aforesaid object, an image editing method of the present invention for cutting out a designated area of an image in given form has as one feature that a plurality of cutout forms are registered, one of the registered cutout forms is designated and placed at a desired position in an image, the cutout form is enlarged or reduced to a desired size, and then the portion of the image inside the cutout form is output as a cutout image.--

Please substitute the paragraph starting at page 25, line 26 and ending at page 26, line 12 with the following

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replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--An image editing method of the present invention to be implemented in a hierarchical data management system for managing a plurality of data items hierarchically has the feature that an icon display size representing a size of an icon to be displayed and data icon display position representing a display position for an icon are registered as attributes of each data. An icon display size and data icon display position are determined in hierarchical order, whereby data icons serving as data identification information can be displayed with a size made different in hierarchical order so that data icons belonging to the same level can be distinguished from those belonging to other levels.--

Please substitute the paragraph starting at page 26, line 20 and ending at page 26, line 3 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--An image editing method of the present invention to be implemented in a hierarchical data management system for managing a plurality of data items hierarchically has the feature that data icons serving as data identification information are displayed with a size made different in hierarchical order, a desired data icon is designated in order to access the data, and a data icon representing data whose access frequency is relatively high is displayed with a relatively large size.--

Please substitute the paragraph starting at page 27, line 4 and ending at page 28, line 14 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--Data icons belonging to the same level are displayed distinguishably from those belonging to other levels. A level to which data having a relatively high access frequency belongs is displayed with a relatively large size. When a data icon displayed with a relatively large size is not accessed for a period of time exceeding a certain period, the data icon is reduced in proportion to the period

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during which it is not accessed or a frequency by which any other data is accessed. A desired level or data icon is designated, and then zoomed in, panned, or zoomed out. Data icons belonging to a level subordinating a marked level are vignetted and displayed. Vignetting is achieved by enlarging raw data representing a number of pixels smaller than the number of pixels to be displayed. Data icons belonging to a higher level are vignetted more intensely. The data attributes include one of date information representing a data of access gained to data, and date information specified in data. An icon display size and data icon display position are determined date-orderly, whereby data icons serving as data identification information are displayed with a size made different date-orderly so that data icons associated with the same date can be displayed distinguishably from those associated with other dates. By varying an icon display size and data icon display position, data icons associated with the same date are zoomed in or out. Moreover, either hierarchical display or date-orderly display can be selected. A position in an entire hierarchy being currently displayed in a screen is displayed within a separate window in the form of a position on a plane defined

with vertical and lateral lines and a position in a depth direction. When a desired position is designated in the separate window, a desired level can be displayed at a desired enlargement ratio.--

Please substitute the paragraph starting at page 31, line 4 and ending at page 32, line 22 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--The display means displays data icons belonging to the same level distinguishably from those belonging to other levels. The second display changing means displays a level to which data whose access frequency is relatively high belongs with a relatively large size. When a data icon displayed with a relatively large size has not been accessed for a period exceeding a certain period of time, the second display changing means reduces the data icon in proportion to the period during which the data icon is not accessed or a frequency by which any other data is accessed. A first display changing means is used to designate a desired level or data icon and to zoom in, pan, or zoom out the level or

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data icon. The first display changing means includes a
vignetting means for vignetting data icons belonging to a
level subordinating a marked level and then displaying the
data icons. The vignetting means achieves vignetting by
enlarging raw data representing a number of pixels smaller
than the number of pixels to be displayed. The vignetting
means vignetted data icons belonging to a higher level more
intensely. The attribute registering means includes a second
display means for registering one of date information
representing a date of creation of data, date information
representing a date of access gained to data, and date
information specified in data as an attribute of each of the
data, for determining an icon display size and data icon
display position based on date-order, and thus displaying
data icons serving as data identification information with a
size made different date-orderly so that data icons
associated with the same date can be distinguished from those
associated with other dates. A third display changing means
is provided for zooming in or out data icons associated with
the same date by varying an icon display size and data icon
display position. A switching means is provided for
selecting either the first display means or second display

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means. The first and second display means display a position

in an entire hierarchy, which is currently displayed in a

screen, in a separate window in the form of a position on a

plane defined with vertical and lateral lines and a position

in a depth direction. A display designating means is used to

designate a desired position in the separate window so as to

display a desired level at a desired enlargement ratio.--

Please substitute the paragraph starting at page

33, line 14 with the following replacement paragraph. A

marked up copy of this paragraph, showing the changes made

thereto, is attached.

--Fig. 5 shows a data base system of a prior art

display;--

Please substitute the paragraph starting at page

38, line 1 and ending at page 38, line 2 with the following

replacement paragraph. A marked up copy of this paragraph,

showing the changes made thereto, is attached.

--Figs. 55A to 55D show methods for accessing each of several data icons grouped in an embodiment;--

Please substitute the paragraph starting at page 39, line 21 and ending at page 39, line 23 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--Fig. 74 is a flowchart describing a sequence for displaying a cutout state of an image in the fourth embodiment;--

Please substitute the paragraph starting at page 42, line 21 and ending at page 42, line 22 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--Referring to the appended drawings, the preferred embodiments of the present invention will be described in detail below.--

Please substitute the paragraph starting at page 44, line 24 and ending at page 45, line 8 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--In Figs. 2, 40 and 75 showing the configuration of systems, reference numeral 515 may be a floppy disk or the same for storing files, data and/or program-modules, which include application software only or may also include operating systems. Some files, data and/or program-modules stored in a floppy disk 515 are loaded down into a memory (RAM) of a personal computer system before a CPU performs processes of the present invention by using the program-modules in the RAM. The floppy disk may be replaced with a host computer or a communication network.--

Please substitute the paragraph starting at page 46, line 24 and ending at page 47, line 5 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--In Fig. 6, a point displayed so as to appear far away represents a past point and a point seen close represents a future point. Reference numerals 40a, 40b, 40c, and 40d denote display screens. 42a, 42b, 42c, and 42d denote a ring representing a date in different states. 41a, 41b, 41c and 41d denote a data icon on the ring (a data item in the time band represented by the ring) in the different states.--

Please substitute the paragraph starting at page 48, line 23 and ending at page 49, line 11 with the following replacement paragraph. A marked up copy of this paragraph, showing the changes made thereto, is attached.

--When numerous data items belong to a certain cell, or in other words, numerous data items are associated with a time band of a certain cell, the data items should be displayed slowly so that all the data items can be checked carefully. A cell containing a number of data items larger than a given number is divided into cells of a shorter time band. In the example of Fig. 7, many data items belong to cell 10/7. The cell is therefore divided into four cells

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each corresponding to an interval of six hours. Numerous

data items belong to cell 12:00-18:00. The cell is therefore

subdivided into intervals of one hour. Thereafter, a cell is

subdivided at intervals of ten minutes, one minute, ten

seconds, one second, etc., until the number of data items

belonging to one cell becomes smaller than or equal to the

given number.--

Please substitute the paragraphs starting at page

49, line 17 and ending at page 50, line 22 with the following

replacement paragraphs. A marked up copy of these

paragraphs, showing the changes made thereto, is attached.

--For explicitly informing a user of the fact that

the display speed decreases, the rings shown in Fig. 8 are

displayed with a color made lighter in a direction of an

auxiliary arrow 60 depicted with a dashed line; that is, as

the rings represent the cells of decreasing time intervals

(in Figs. 8 and 10, the depth of a color is indicated with

the thickness of the ring). In Fig. 8, data icons are not

illustrated for the sake of clarity of explanation. In Fig.

8, reference numeral 60 denotes a display screen. A ring 61

lies at an outermost position in the display screen. The ring 61 is displayed in the deepest color. The ring 61 represents cell 10/6, for one day, in Fig. 7. Rings 62a and 62b represents time bands of six hours (o:00-6:00 and 6:00-12:00) and are displayed with lighter colors than the ring 61. Rings 63a and 63b represent time bands of one hour (12:00-13:00 and 13:00-14:00) and are displayed with lighter colors that the rings 62a and 62b. Reference numeral 64 denotes and area in which a time band represented by the outermost ring at that time (ring 61 in Fig. 8) is displayed. Owing to the foregoing display technique, a user can observe even a time band in which data items are congested, for a sufficiently long period of time while recognizing a change between time intervals.

Whether or not a cell should be subdivided is, as described in conjunction with Fig. 7, dependent largely on whether or not the number of data items belonging to the cell exceeds a certain given value. The given value is equal to a maximum number of data icons that can be displayed on one ring. As shown in Fig. 3, in this embodiment, up to eight data icons are placed on one ring. The given value is therefore eight.--

IN THE ABSTRACT:

Please substitute the abstract starting at page
178, line 2 and ending at page 179, line 8 with the following
replacement abstract. A marked up copy of the abstract
showing the changes made thereto, is attached.

--The present invention provides a time-series data
display method and system for displaying time-series data
items so that a user can grasp time more intuitively. First
data associated with a desired date is retrieved and
displayed, second data associated with a contiguous date is
retrieved, and a display screen for the second data is
displayed smaller than that for the first data in a temporal
direction starting with the desired date. Third data is
associated with a date contiguous to the second date
retrieved, and is displayed inside the second data with a
smaller display area. Also, in a hierarchical data display
method and browser system, a display area is divided into an
area where icons representing data items belonging to one
level are displayed, and an area where child levels are
displayed. As hierarchical depth increases, the data icons
are made smaller and simpler. The hierarchical structure of

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a file system or data base can be displayed as a Venn

diagram. Data items belonging to child levels are not hidden

but displayed as reduced images, whereby intended data can be

located effortlessly. A cutout form and image are registered

mutually and independently. An identifier, position, and

size of the cutout form are specified as the attributes of

the image. Thus, an image can be fetched into album software

by performing a simple operation, or a cutout can be changed

in size.--

IN THE CLAIMS:

Please cancel Claims 1-35, 91-95, 110-116, and 119-

122 without prejudice to or disclaimer of the subject matter

recited therein.

REMARKS AND CLAIM TO PRIORITY

This is a divisional application of Application No.

08/573,519 filed December 15, 1995 (the "'519 Application").

Claims 36-90, 96-109, 117, 118, 123, and 124 are

pending, having been restricted out of the '519 application.

Claims 36, 49, 62, 72, 73, 77, 80, 96, 99, 117, and 123 are

in independent form.

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The specification has been amended to include a reference to the '519 Application. The title, specification, and abstract, have been amended to make the changes made in the '519 application.

Applicants claim priority under 35 U.S.C. § 119 based upon Japanese Priority Applications Nos. 6-313704, filed December 16, 1994, 7-064310, filed March 23, 1995, and 7-064311, filed March 23, 1995, and respectfully request acknowledgment of this claim and of receipt of the certified copies of the priority documents, which were filed March 25, 1996, in the '519 Application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

Attorney for Applicants

Registration No. _____

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO SPECIFICATION

The title has been amended as follows:

--INTUITIVE HIERARCHICAL TIME-SERIES DATA DISPLAY

METHOD AND_[INFORMATION PROCESSING] SYSTEM [FOR REALIZING IT]--

A new paragraph has been added to page 1 after the

title and before "BACKGROUND OF THE INVENTION" as follows:

--This application is a division of Application No.

08/573,519 filed December 15, 1995.--

The paragraph starting at page 1, line 18 and ending at

page 2, line 4 has been amended as follows:

--In a file management system or data base system for a

computer, a technique of managing data hierarchically is often

used to manage numerous data items. In a file system,

especially, under almost all operating systems (hereinafter OSs),

the whole of the file system is segmented and managed using a

plurality of hierarchical directories. As far as recently-released OSs are concerned, it is a matter of common practice to adopt a browser system in which a graphical user interface (hereinafter a GUI) is used to display a hierarchical structure of a file system or the like [in] on a screen, and a pointing device such as a mouse is used to point out intended data, and thus data such as a file is accessed.--

The paragraph starting at page 4, line 4 and ending at page 4, line 7 has been amended as follows:

--A system for displaying a hierarchical file system using metaphors of folders[;], such as, the one installed in the OS for the Macintosh trademark of Apple Computer or the OS/2 trademark of IBM has become popular.--

The paragraph starting at page 8, line 10 and ending at page 8, line 16 has been amended as follows:

--Recently, what is called catalogue software has made

its debut as data base software running in a personal computer.

The catalogue software is a data base handling graphics,

documents, and images mainly. Fundamentally, a reduced image

(hereinafter a "thumbnail image") is created for each data, and

desired data is searched by checking (browsing) the reduced

images.--

The paragraphs starting at page 9, line 7 and ending at

page 10, line 22 have been amended as follows:

--In the case of an album for making a collection of

photographs, a user not only inserts photographs but also writes

down comments or overlays a sheet of paper shown in Fig. 62

(hereinafter, a "frame"), which reveals any specific part of a

photograph and hides the other part thereof, on a photograph.

This is a commonly adopted technique for attracting attention to

a specific photograph or highlighting an impressive photograph.

For implementing the technique shown in Fig. 62 in

[the] album software, very complex operations are needed to cut

out an image using a user-specific frame and store a resultant

image. Fig. 63 is a flowchart describing the operating

procedure. At step S201, application software for drawing

graphics (hereinafter drawing software) is activated, and a frame

is created. In Fig. 64, reference numeral 901 denotes an example

of a frame created. At step S202, an image is read into the

drawing software, and superposed on the frame by adjusting the

size of the image. In Fig. 64, 902 denotes an example of the

image superposed on the frame. At step S203, application

software for manipulating or editing an image (hereinafter, photo

retouch software) is activated. The image superposed on the

frame is fetched into the photo retouch software via a clipboard.

Within the drawing software, a frame and image can be handled

[mutually] separately from each other. Once fetched into the

photo retouch software, the frame and image are made into one

image. At step S204, a portion of the image outside the frame is

erased within the photo retouch. Reference numeral 904 in Fig.

64 denotes an example of erasure. At this time, an area

designation tool and eraser tool of the photo retouch software

are used. 904 in Fig. 64 denotes an example of a resultant

corrected image. At step S205, the corrected image is saved as a

new image in a file. At step 206, the image is fetched into the album software.

The known procedure of cutting out an image and fetching it into the album software involves activation of [some] several software packages. The procedure is very complex and the work is hard. For carrying out the foregoing operations, a user [is requested to have] needs a certain amount of expertise.--

The paragraph starting at page 24, line 24 and ending at page 25, line 6 has been amended as follows:

--For accomplishing the aforesaid object, an image editing method of the present invention for cutting out a designated area of an image in given form [is characterized in] has as one feature that a plurality of cutout forms are registered, one of the registered cutout forms is designated and placed at a desired position in an image, the cutout form is enlarged or reduced to a desired size, and then the portion of the image inside the cutout form is output as a cutout image.--

The paragraph starting at page 25, line 26 and ending at page 26, line 12 has been amended as follows:

--An image editing method of the present invention to be implemented in a hierarchical data management system for managing a plurality of data items hierarchically [is characterized in] has the feature that an icon display size representing a size of an icon to be displayed and data icon display position representing a display position for an icon are registered as attributes of each data. An icon display size and data icon display position are determined in hierarchical order, whereby data icons serving as data identification information can be displayed with a size made different in hierarchical order so that data icons belonging to the same level can be distinguished from those belonging to other levels.--

The paragraph starting at page 26, line 20 and ending at page 26, line 3 has been amended as follows:

--An image editing method of the present invention to

be implemented in a hierarchical data management system for

managing a plurality of data items hierarchically [is

characterized in] <u>has the feature</u> that data icons serving as data

identification information are displayed with a size made

different in hierarchical order, a desired data icon is

designated in order to access the data, and a data icon

representing data whose access frequency is relatively high is

displayed with a relatively large size.--

The paragraph starting at page 27, line 4 and ending at

page 28, line 14 has been amended as follows:

--Data icons belonging to the same level are displayed

distinguishably from those belonging to other levels. A level to

which data having a relatively high access frequency belongs is

displayed with a relatively large size. When a data icon

displayed with a relatively large size is not accessed for a

period of time exceeding a certain period, the data icon is

reduced in proportion to the period during which it is not

accessed or a frequency by which any other data is accessed. A

desired level or data icon is designated, and then zoomed in,

panned, or zoomed out. Data icons belonging to a level

subordinating a marked level are vignetted and displayed.

Vignetting is achieved by enlarging raw data representing [the] a

number of pixels smaller than the number of pixels to be

displayed. Data icons belonging to a higher level are vignetted

more intensely. The data attributes include one of date

information representing a data of access gained to data, and

date information specified in data. An icon display size and

data icon display position are determined date-orderly, whereby

data icons serving as data identification information are

displayed with a size made different date-orderly so that data

icons associated with the same date can be displayed

distinguishably from those associated with other dates. By

varying an icon display size and data icon display position, data

icons associated with the same date are zoomed in or out.

Moreover, either hierarchical display or date-orderly display can

be selected. A position in an entire hierarchy being currently

displayed in a screen is displayed within a separate window in

the form of a position on a plane defined with vertical and

lateral lines and a position in a depth direction. When a

desired position is designated in the separate window, a desired

level can be displayed at a desired enlargement ratio.--

The paragraph starting at page 31, line 4 and ending at

page 32, line 22 has been amended as follows:

--The display means displays data icons belonging to

the same level distinguishably from those belonging to other

levels. The second display changing means displays a level to

which data whose access frequency is relatively high belongs with

a relatively large size. When a data icon displayed with a

relatively large size has not been accessed for a period

exceeding a certain period of time, the second display changing

means reduces the data icon in proportion to the period during

which the data icon is not accessed or a frequency by which any

other data is accessed. A first display changing means is used

to designate a desired level or data icon and to zoom in, pan, or

zoom out the level or data icon. The first display changing

means includes a vignetting means for vignetting data icons

belonging to a level subordinating a marked level and then

displaying the data icons. The vignetting means achieves

vignetting by enlarging raw data representing [the] a number of

pixels smaller than the number of pixels to be displayed. The

vignetting means vignetted data icons belonging to a higher level

more intensely. The attribute registering means includes a

second display means for registering one of date information

representing a date of creation of data, date information

representing a date of access gained to data, and date

information specified in data as an attribute of each of the

data, for determining an icon display size and data icon display

position based on date-order[ly], and thus displaying data icons

serving as data identification information with a size made

different date-orderly so that data icons associated with the

same date can be distinguished from those associated with other

dates. A third display changing means is provided for zooming in

or out data icons associated with the same date by varying an

icon display size and data icon display position. A switching

means is provided for selecting either the first display means or

second display means. The first and second display means display

a position in an entire hierarchy, which is currently displayed
in a screen, in a separate window in the form of a position on a
plane defined with vertical and lateral lines and a position in a
depth direction. A display designating means is used to
designate a desired position in the separate window so as to
display a desired level at a desired enlargement ratio.--

The paragraph at page 33, line 14 has been amended as
follows:

--Fig. 5 shows a data base system of a prior art
<u>display</u>;--

The paragraph starting at page 38, line 1 and ending at
page 38, line 2 has been amended as follows:

--Figs. 55A to 55D show methods for accessing each of
<u>several</u> data icons grouped in an embodiment;--

The paragraph starting at page 39, line 21 and ending

at page 39, line 23 has been amended as follows:

--[Fig .74]<u>Fig. 74</u> is a flowchart describing a sequence

for displaying a cutout state of an image in the fourth

embodiment;--

The paragraph starting at page 42, line 21 and ending

at page 42, line 22 has been amended as follows:

--Referring to the appended drawings, the <u>preferred</u>

embodiments of the present invention will be described in detail

below.--

The paragraph starting at page 44, line 24 and ending

at page 45, line 8 has been amended as follows:

--In Figs. 2, 40 and 75 showing the configuration of

systems, reference numeral 515 may be a floppy disk or the same

for storing files, data and/or program-modules, which include

application software[s] only or may also include operating

systems.   Some files, data and/or program-modules stored in a

floppy disk 515 are loaded down into a memory (RAM) of a personal

computer system before a CPU performs processes of the present

invention by using the program-modules in the RAM.   The floppy

disk may be replaced with a host computer or a communication

network.--

     The paragraph starting at page 46, line 24 and ending

at page 47, line 5 has been amended as follows:

     --In Fig. 6, a point [seen] <u>displayed so as to appear</u>

far <u>away</u> represents a past point and a point seen close

represents a future point.   Reference numerals 40a, 40b, 40c, and

40d denote display screens.   42a, 42b, 42c, and 42d denote a ring

representing a date in different states.   41a, 41b, 41c and 41d

denote a data icon on the ring (a data item in the time band

represented by the ring) in the different states.--

     The paragraph starting at page 48, line 23 and ending

at page 49, line 11 has been amended as follows:

--When numerous data items belong[s] to a certain cell, or in other words, numerous data items are associated with a time band of a certain cell, the data items should be displayed slowly so that all the data items can be checked carefully. A cell containing [the] a number of data items larger than a given number is divided into cells of a shorter time band. In the example of Fig. 7, many data items belong to cell 10/7. The cell is therefore divided into four cells [at] each corresponding to an interval[s] of six hours. Numerous data items belong to cell 12:00-18:00. The cell is therefore subdivided [at] into intervals of one hour. Thereafter, a cell is subdivided at intervals of ten minutes, one minute, ten seconds, one second, etc., until the number of data items belonging to one cell becomes smaller than or equal to the given number.--

The paragraphs starting at page 49, line 17 and ending at page 50, line 22 have been amended as follows:

--For explicitly informing a user of the fact that the display speed decreases, the rings shown in Fig. [6] 8 are

displayed with a color made lighter in a direction of an

auxiliary arrow 60 depicted with a dashed line; that is, as the

rings represent the cells of decreasing time intervals (in Figs.

8 and 10, the depth of a color is indicated with the thickness of

the ring). In Fig. 8, data icons are not illustrated for the

sake of clarity of explanation. In Fig. 8, reference numeral 60

denotes a display screen. A ring 61 lies at an outermost

position in the display screen. The ring 61 is displayed in the

deepest color. The ring 61 represents cell 10/6 [of a], for one

day, in Fig. 7. Rings 62a and 62b represents time bands of six

hours (o:00-6:00 and 6:00-12:00) and are displayed with lighter

colors than the ring 61. Rings 63a and 63b represent time bands

of one hour (12:00-13:00 and 13:00-14:00) and are displayed with

lighter colors that the rings 62a and 62b. Reference numeral 64

denotes and area in which a time band represented by the

outermost ring at that time (ring 61 in Fig. 8) is displayed.

Owing to the foregoing display technique, a user can observe even

a time band[,] in which data items are congested, for a

sufficiently long period of time while recognizing a change

between time intervals.

Whether or not a cell should be subdivided is, as described in conjunction with Fig. 7, dependent largely on whether or not the number of data items belonging to the cell exceeds a certain given value. The given value is equal to a maximum number of data icons that can be displayed on one ring. As shown in Fig. 3, in this embodiment, up to eight data icons are placed on one ring. The given value is therefore eight.--

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO ABSTRACT

The abstract starting at page 178, line 2 and ending at page 179 has been amended as follows:

--The present invention provides a time-series data display method and system for displaying time-series data items so that a user can grasp time more intuitively [and sensuously, and an information processing system for realizing the display method, wherein]. [first] First data associated with a desired date is retrieved and displayed, second data associated with a [date contiguous] contiguous date [to the desired date] is retrieved, and a display screen for the second data is displayed [with a] smaller [size] than [a] that [display screen] for the first data in a temporal direction starting with the desired date. [third] Third data associated with a date contiguous to the second date [of the second data is] retrieved, and [the third data] is displayed inside the second data with a smaller display area [thereof made smaller]. [The present invention also provides] Also, in a hierarchical data display method and browser

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system, [wherein] a display area is divided into an area[,] <u>where</u>
[in which data] icons representing data items belonging to one
level are displayed, and an area [in which] <u>where</u> child levels
are displayed. As [a] hierarchical depth increases, the data
icons are made smaller [in size] and simpler. The hierarchical
structure of a file system or data base [having a hierarchical
structure] can be displayed [in the form of] <u>as</u> a Venn diagram<u>.</u>
[, thus making it possible to grasp the whole structure
intuitively.] Data items belonging to child levels are not
hidden but displayed [in the form of] as reduced images, whereby
intended data can be located effortlessly. A cutout form and
image are registered mutually and independently. An identifier,
position, and size of the cutout form are specified as the
attributes of the image. Thus, an image can be fetched into
album software by performing a simple operation, or a cutout can
be changed in size.--